WA 2917 3a

7/10/1991

BURLINGTON
ENVIRONMENTAL INC.
CHEMPRO Division

CERTIFIED MAIL

July 10, 1991

Ms. Carrie Sikorski
U.S. Environmental Protection Agency
RCRA Permits
Region X
1200 Sixth Avenue
Seattle, Washington 98101

Re: Response to NOD #3 and Administrative Order for the Chemical Processors, Inc. Pier 91 Facility

Dear Ms. Sikorski:

Please find enclosed a response to NOD #3 for the Pier 91 Facility received from Ecology on June 7, 1991, excluding items #22, 25, 26, 29, and 31. Responses to these items will be submitted within 60 days from reciept of the NOD, in accordance with the schedule agreed to by Ecology. Included with the response are revisions to the Part B Permit Application for the Pier 91 Facility.

Two copies of the revision pages for the Part B Permit Application are being supplied to EPA with this letter, for copies 3 and 4 of the Pier 91 Facility Part B Permit Application. Copies of the revised pages have also been sent to Ecology.

Please place these revised pages in your copies of the permit application. Contact me at 223-0500 if you have any questions.

Sincerely,

Catherine L Buller

Catherine L. Buller
Environmental Programs Manager

Enclosures

cc: Cindy Gilder, Ecology

2203 Airport Way South
Suite 400
Seattle, WA 98134
(206)223-0500 • FAX: (206) 223-7791

BURLINGTON
ENVIRONMENTAL INC.
CHEMPRO Division

Submitted to Ecology:
July 10, 1991

PIER 91 FACILITY
NOTICE OF DEFICIENCY #3
June 7, 1991

General Comments

1. The owner's signature is not on the current Part A application. Additionally, the Owner Certification in Section K of the Permit Application is dated August 31, 1989, prior to significant revisions in facility design and an increase in capacity. Current signatures must be provided for each of these documents.

Response: Current signatures have been requested from the facility owner, but have not been provided in time for submittal with this NOD response. The signature pages will be forwarded to Ecology immediately after they are received by Chempro; it is hoped that this will occur within the next month.

2. The May 1, 1991 response to NOD comment #4 is incorrect. The container storage area is RCRA regulated. If this is to be a permitted storage area, as the response implies, its capacity must be added to the Part A Application. If it is not to be a permitted area it is still RCRA regulated and must meet the requirements of WAC 173-303-200(1)(b). Revise Figure B1-2 and all identical figures throughout the application to remove the reference to this area as "NON-RCRA". (See also comment number 7)

Response: The May 1, 1991 response to NOD comment #4 stated that "On-site generated waste is stored in the same segregated secondary containment areas as wastes received from off-site." The response should have stated that on-site generated waste is stored temporarily (less than 90 days) in secondary containment meeting the requirements of WAC 173-303-200(1)(b). The Pier 91 Facility does not receive containerized waste from off-site. Figure B1-2, Site Plan, and other similar Figures (B4-1, D1-1, F1-1, G1-2, and I1-2), as well as Figures B2-5b, C1-2, D1-3, and I1-2a (Proposed Dangerous Waste Tank System and Processing Area), have been revised to remove the reference to this area as an "Existing Non-RCRA" area. The text of Sections B, C, D, G, and I have been revised to indicate that the temporary container storage pad is not existing.

3. The construction schedule submitted with the December 27, 1990 NOD response is inadequate and confusing. Provide a new schedule which addresses the following concerns:

a. State where the loading/unloading pad will be constructed. The facility layout indicates that this will be in the proposed facility, yet construction of this portion of the facility is not scheduled to begin until at least year 5. If the loading pad is to be somewhere else, the application must be revised to reflect this. (See also comment number 4)

Response: The loading/unloading pad will be constructed in the location shown in the permit application. Construction is scheduled to begin

2203 Airport Way South
Suite 400
Seattle, WA 98134
(206)223-0500 • FAX: (206) 223-7791

immediately after final Part B Permit issuance, and will be completed in approximately seven months, as shown in the construction schedule. Construction of the pad is a project that is part of the Pier 91 Facility Part B Permit plans, rather than a discretionary project. The pad will exist before construction of the rest of the proposed dangerous waste processing area, which is a discretionary project. Construction of the remainder of the proposed tank system is scheduled to commence in the fifth or sixth year following final Part B Permit issuance, as shown in the construction schedule. No revisions have been made to the construction schedule or the permit application.

b. Secondary containment upgrades are not discretionary. Upgrades to approved standards must be completed prior to storing or treating dangerous waste in that area. Note that WAC 173-303-610(3)(c)(ii) requires that, unless the facility can make certain demonstrations, dangerous waste management units must begin closure not later than one year after the date on which the unit received the most recent volume of dangerous waste.

Response: In the event that additional tanks in the small yard (see Figure D1-1, Existing Dangerous Waste Tank System and Process Area) are replaced and/or put into RCRA service, any necessary upgrades to secondary containment will be made. However, the decision to use these tanks for RCRA service is a discretionary one. Therefore, the secondary containment upgrades are also discretionary. Existing interim status dangerous waste management units that are taken out of RCRA service will be closed in accordance with WAC 173-303-610(3)(c)(ii).

c. The plans for upgrading tank bottoms is not acceptable. References to this procedure must be deleted and a timetable for construction of an acceptable secondary containment system provided. (See also comment number 25)

Response: Plans for construction of secondary containment meeting regulatory requirements wer the subject of discussion between Chempro and Ecology's Northwest Regional Office from June to December, 1990. These plans, including the tank bottom retrofitting plans, were approved by EPA and Ecology as part of a consent order signed January 9, 1991. Engineering drawings illustrating the options for retrofitting bottoms on tanks 2705 - 2708 were submitted to Ecology and EPA December 27, 1990, with revisions to the Pier 91 Facility Part B permit application. A construction schedule showing the required completion date of March 31, 1991, was also submitted with the revisions December 1990 in response to a NOD. The retrofitting was completed by March 31, 1991.

As discussed in a meeting July 2, 1991 between Ecology and Chempro, the tank bottom retrofits were designed specifically to meet regulatory requirements for secondary containment. The design has been certified as adequate by a state licensed registered professional engineer. Further demonstration of adequacy of the design of the tank bottoms and secondary containment will be submitted to Ecology within 60 days of receipt of the NOD, as a response to question #25. An as-built drawing (Drawing # 43008) illustrating the retrofitted tank bottoms is included with the

revisions to the permit application. A second option not chosen for the retrofitted bottoms has been deleted from the permit application.

d. The time frames in the current schedule are too long. By their comment on the Georgetown facility Draft Permit EPA has indicated that extended construction schedules are not acceptable.

Response: Time frames for non-discretionary projects are based on actual time constraints posed by limitations such as weather and subcontractor availability. Time frames for discretionary projects are based on best estimates of the time necessary to complete the projects, as well as the likelihood that influencing factors will favor executing the project. Decisions to undertake discretionary projects are based on parameters over which there may be no control or no means of predicting, such as market trends and internal decisions on capital expenses. Therefore, the time frames for the completion of these projects are more subjective. Since neither EPA nor Ecology have regulatory authority over whether these discretionary projects are implemented, acceptable time frames for their completion may only be established by Chempro. All projects implemented at the Pier 91 Facility will be done in accordance with applicable regulations, as shown in the permit application.

Specific Comments

4. **Figure B1-2.** Revise this and all identical diagrams to delete reference to the "existing RCRA loading/unloading pad" as this pad does not currently exist.

Response: Figures B1-2, B4-1, D1-1, F1-1, G1-2, and I1-2, Site Plan, and Figures B2-5b, C1-2, D1-3, and I1-2a, Proposed Dangerous Waste Tank System and Processing Area, have been revised, as requested. The text of Sections B, C, D, G, and I have been revised to indicate that the loading/unloading area is not existing.

As shown in the Pier 91 Facility Construction Schedule submitted to Ecology December 27, 1990, and as explained in the response to question #3c, it is intended that construction of the RCRA loading/unloading pad will begin immediately after final permit issuance. The pad will exist before construction of the rest of the proposed dangerous waste processing area, which is a discretionary project.

5. **Section B1.6.2, p. B20.** Determination of Btu value from chemical composition is not adequate. Clearly state that the Btu value of all wastestreams will be determined only by testing.

Response: According to WAC 173-303-300(2), analysis of a dangerous waste may include or consist of existing published or documented data on the dangerous waste, or on waste generated from similar processes, or data obtained by testing, if necessary. Therefore, it is not necessary to test all wastestreams for Btu value.

As already stated in the response to questions on the Pier 91 Facility submitted to Ecology May 1, 1991 (items #1 & 2), accurate estimation of Btu values can be made based on chemical composition of a waste. The Btu value of a waste is a direct correlation of the chemical composition and heat of combustion value for individual chemicals, and therefore can be accurately determined by evaluation of the chemical composition provided on the profile. For those profiles of wastes destined for energy recovery where the Btu value cannot be determined by evaluation of the chemical composition, Btu testing is performed on a representative sample of the waste. In this way, the determination of whether a waste is appropriate for use as dangerous waste-derived fuels is made prior to receiving the waste. There is no reason for testing all wastestreams for Btu value, since not all wastes are used as dangerous waste-derived fuels.

Wastes blended for dangerous waste-derived fuels that are sent to cement kilns that have certified compliance with emissions standards for metals, HCl, Cl_2, particulates, and CO are not required to have a minimum of 5,000 Btu/lb. Wastes destined for energy recovery as dangerous waste fuel in industrial boilers or furnaces which have not certified compliance in accordance with 40 CFR Part 261.103 will contain at least 5,000 Btu/lb, unless it can be demonstrated that a material is burned "Solely as an Ingredient."

At the Pier 91 Facility, the majority of material that is blended as dangerous waste-derived fuels is waste oil that fails the Chlor-detect test. The Btu value of waste oil is known to be 14,000 - 17,000/lb. Since the Btu value is known, it is not necessary to test for the Btu value, unless the waste does not match the profile.

For off-site generated wastes, the fingerprint screen verifies that the waste matches the profile. If the waste does not match the profile, the waste is not placed into dangerous waste-derived fuels without verification that the Btu value is greater than 5,000 Btu/lb. For on-site generated wastes, the Btu value is demonstrated by the chemical composition or heat of combustion testing to be greater than 5,000 Btu/lb prior to being placed into dangerous waste-derived fuels. Sections B1.6.2, Process Descriptions by Wastestream, and C2.0, Waste Analysis Plan, already contain this information.

6. **Section B1.6.2, p. B27.** The last sentence on this page states that "if necessary" centrate will be sent to oil and coolant emulsion treatment. Clarify what parameters and thresholds are used in making this determination.

Response: The centrate is sent to oil and coolant emulsion treatment only if testing determines that oil and grease content is > 100 ppm. The text of Section B1.6.2, Process Descriptions by Wastestream, and Figure B1-5, Industrial Waste Sludges: Process Flow Diagram, have been revised to clarify this process.

7. **Section B4-1, p. B45.** Please explain how the facility will not violate the generator 90 day accumulation limits when shipping out waste only 2 or 4 times annually.

Response: On-site generated wastes are not continuously accumulated in the temporary container storage area. When waste is being accumulated, daily inspections ensure that the waste is shipped off-site before 90 days have passed. Because waste is generated on-site infrequently at the Pier 91 Facility, shipments off-site are expected to be necessary only 2 to 4 times annually, for occurances such as periodic tank cleaning operations.

8. **Section B7.3, p. B67.** The paragraph citing the use of MTCA standards for spill clean up is not adequate. The paragraph is very confusing as written. Clearly state that MTCA standards are applicable to at least all dangerous constituents under 40 CFR 261 Appendix VIII and dangerous waste residues. Delete any reference to "waste managed at the facility". Make these changes here, and wherever else in the application MTCA standards are discussed (i.e., Appendix G-2, Section I1.2, I1.5.2, and I1.5.3).

Response: The text of Section B7.3, Appendix G-2, and Sections I1.2, I1.5.2, and I1.5.3 are quoted verbatim from WAC 173-303-610(2)(b), except for the newly included language concerning MTCA Cleanup Standards issued February 1991. Revision of the permit application text to include the reference to MTCA Cleanup Standards was made at the direction of Ecology's RCRA permits staff pursuant to a previous NOD request prior to issuance of the amended WAC 173-303 (effective April 7, 1991). These amendments to WAC 173-303 did not include revision of WAC 173-303-610(2)(b)(i) & (ii) to indicate that MTCA standards are applicable to at least all dangerous constituents under 40 CFR 261 Appendix VIII and dangerous waste residues for spill cleanup or for clean closure measures.

The text of the referenced sections has been revised to indicate that the MTCA standards will be considered, as well as the requirements specified in WAC 173-303-610(2)(b)(i) & (ii).

We are willing to continue to meet with Ecology at any time to discuss the continued use and/or revisions of this approach in revised closure guidance being developed by Ecology.

9. **Section C1.2.** Clearly state in the application where the centrifuge (2601) will be located. The text indicates relocation from "existing" area to "proposed" area. However, Figure C1-2 states that the centrifuge will be relocated "if necessary".

Response: Sections B1.0, General Facility Description, C2.1, Facility Description, D, Process Information (introduction), D1.1, Design Specifications and Structural Integrity of Tanks, and I1.1, Facility Description, already state that the centrifuge unit currently used will be relocated to the proposed dangerous waste tank system, if that area is constructed. Chempro may use its discretion not to build the proposed tank system (see response to NOD #3d). If the proposed area is not constructed, it will not be necessary for the centrifuge unit to be relocated. Figures B2-5b, C1-2, D1-3, and I1-2a, Proposed Dangerous Waste Tank System and Processing Area, which already show the location of the centrifuge unit in the proposed tank system, have been revised to remove the words "if necessary".

10. **Section C2.4.4.** The discussion of analytical rationale should clearly indicate that the Flash Point test must be used in order to determine whether the waste exhibits the characteristic of ignitability.

Response: The text of Section C2.4.4, Analytical Rationale and Parameters, has been revised to indicate that the Flash Point test must be used in order to determine whether a waste exhibits the characteristic of ignitability.

11. **Appendix C-2.** The response to Item 22, regarding the Radioactivity Test, in the Pier 91 NOD #2 was inadequate. While Ecology chose not to revise this language for the Georgetown Permit, clarification will be necessary for this and future facility permit applications. Please define the type of detector to be used, the sample container(s), the geometry of the detector and container (including distance), and what constitutes "above background".

Response: The radioactivity monitor currently used is a Radiation Alert Monitor 4. This monitor or equivalent equipment will be used. The detector is a halogen quenched GM tube (1.5 mg/cm^2), with an accuracy of $\pm$ 10%. Efficiency of the detector is as follows:

80% alpha (α)
75% beta (β)
100% gamma (Γ)

The detector does not distinguish between specific radioactive particles, but monitors overall spontaneous radioactivity energies.

A revised radioactivity test method has been drafted recently to provide additional information on sample containers, geometry of the detector and container, and what constitutes "above background."

12. **Appendix C-2.** The December 27, 1991 revisions to the Permit Application included only one revised PCB analytical test method, without indication as to whether this was revised primary or secondary analysis. Prior to this, the primary and secondary methodology had been the same. Please clarify what is the current PCB analytical test method(s).

Response: Although question #23 in NOD #2 for the Pier 91 Facility only addressed the primary PCB test method, the PCB analytical test method should be the same for both the primary and secondary analyses. Copies of the test method are included with the present revisions to replace both the primary and secondary analyses in Appendix C-2, Analytical Methods.

13. **Section D1.1.** Provide more information about the tank anchor bolt systems. Specifically, demonstrate that bolts do not compromise the integrity of the secondary containment pad or coatings. Provide information for bolt systems installed into both new and existing concrete.

Response: Drawings 43006, 43007, and 44006 (formerly drawings 23006, 23007, and 24006) in Appendix D-8, Design Information for Tanks, have been revised to show that the anchor bolts do not penetrate through the concrete.

The notes on the engineering drawings refering to "existing concrete" indicate that the concrete is to exist at the time of installation. The concrete foundations will be poured approximately 28 days prior to installation of the tanks. As noted on the drawings, new foundations are required for all planned tanks.

14. **Appendix D-8.** Provide design information sheets for proposed tanks 2302, 2304, 2305, and 2306. The current application does not contain this information.

Response: Drawings D-88-24-S7 and -S8 (Appendix D-8, Design Information for Tanks) were inadvertantly omitted from the revisions submitted to EPA and Ecology December 27, 1990. They are included with the present revisions.

15. **Section D1.1.** The text of this section and the Tank Data Sheets give conflicting information about whether or not an interior tank coating will be applied to tanks 2303-2306. These sources and the Design Information Sheets in Appendix D-8 also give conflicting information about the specific coating to be applied to these and other tanks, variously indicating coal tar epoxy, Tnemec #61, or Tnemec 46H-413. Clearly state here and in Section D1.3 which coating will be applied or the minimum chemical resistance specifications of any coating to be used.

Response: The text of Section D1.1, Design Specifications and Structural Integrity of Tanks, and Section D1.3, Tank Corrosion and Erosion Prevention, has been revised to state that the coating will be Tnemec Series 61 high solids catalyzed epoxy (or equivalent). This is consistent with the information in Appendix D-8, Design Information for Tanks.

16. **Appendix D-2.** Provide chemical resistance specifications for all tank interior coatings proposed for use at the facility. (See also comment number 15) Provide the Tnemec Chemical Resistance Guide to explain the abbreviations in the Chemical Resistance Chart already provided.

Response: Appendix D-2, Tank Interior and Exterior Coating Material Manufacturers' Data, has been revised to include the appropriate information.

17. **Section D1.1, p. D30.** Text on this page implies that existing tanks are not constructed of carbon steel. However, text in Section D1.3 (p. D42) as well as Table D1-4, state that all tanks are constructed of carbon steel. Please clearly state in the application whether all existing tanks are constructed of carbon steel. If the existing tanks are not of carbon steel, revise the last paragraph of p. D42, as existing tank 2706 is proposed to be used to store oil and coolant emuslsions [sic].

Response: Section D1.1, Design Specifications and Structural Integrity of Tanks, has been revised to clarify that all existing tanks are constructed of carbon steel.

18. **Appendix D-8.** Design information for the centrifuge is not provided as indicated in Section D1.1 (p. D34). Provide this information.

Response: Appendix D-8, Design Information For Tanks, has been revised to include design information typical of the existing centrifuge unit. This information is provided for informational purposes only, since the centrifuge is process equipment and not a tank.

19. **Section D1.3, p. D43.** Explain how existing riveted tanks can be certified to API 650 "Welded Steel Tanks for Oil Storage," as stated here.

Response: Section D1-3, Tank Corrosion and Erosion Prevention, has been revised to state that existing tanks have been certified to API 650 (welded construction) or API 12A (riveted construction) standards.

20. **Section D1.3, p. D44.** Please clarify what is meant by "UL 142 tanks" as used here. Do the numbers presented here refer to the proposed tanks original thicknesses, or existing tanks current thicknesses, or both? Clearly state in the application the minimum wall thickness of all existing tanks. Also state the corrosion allowances above design standards for all existing tanks.

Response: The "UL 142 tanks" refered to are cone-bottom tanks designed to UL 142 standards. The text has been revised to eliminate the reference to UL 142 and to reference the appropriate standards for all tanks.

The text of Section D1.3 has been revised to clarify minimum wall thicknesses for existing tanks. The sentence now reads: "Tank 2313 was constructed to API 650 standards. The planned carbon steel storage and treatment tanks will be constructed to API 650 standards (see Appendix D-8). Original wall thicknesses for the existing riveted tanks that were constructed to API 12A standards are 5/16" bottom, 1/4" shell, and 1/4" top."

The corrosion allowance for planned tanks, used for structural calculations, is noted on the engineering certifications (see Appendix D-9). The corrosion allowance for planned tanks is at least 0.060".

For existing tanks, the minimum acceptable shell thickness considered by the certifying, independent, professional engineer was 1/8". When a tank is determined to be at that thickness, it is either repaired or replaced. Actual minimum thicknesses as measured at the time of certification were used by the certifying engineers in their calculations when certifying the tanks. For example, because minimum thicknesses were < 1/8", existing tanks 106 and 108 could not be certified and were removed from service. Actual minimum thicknesses measured at the time of certification are noted only for informational purposes on the tank data sheets (see Figures D-19 - D-20), and are recorded permanently in the inspection files.

21. **Appendix D-8.** Revise Drawing 24005 to indicate tank ID numbers (in the figure not the title) as 2308, 2309, and 2310, not 2708, 2709, and 2710 as is currently indicated.

Response: Drawing 24005 in Appendix D-8, Design Information for Tanks, has been revised to correct tank identification numbers, as requested.

22. **Section D1.2.1.** The application does not contain design and construction information for the secondary containment system in the existing portion of the facility. Provide a description of the basic design parameters, dimensions, and materials of construction. Demonstrate that the secondary containment system will protect against spills, leaks, and precipitation. Describe the impervious base underlying the tank. This description must include the following:

* A demonstration of the materials of construction used to construct or line the system and a demonstration that these materials are compatible with the wastes in the tank system.

* A demonstration that the secondary containment system has sufficient strength and thickness to prevent failure caused by contact with the waste, pressure gradients (including static head and external hydrological forces), climatic conditions, or the stress of daily operations.

* Design drawings and a description showing how the secondary containment system is sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation.

* Design drawings and a demonstration that the secondary containment system is place on a foundation or base that is capable of providing support, resisting pressure gradients above and below the system, and preventing failure due to settlement, compression, or uplift.

Response: A response to this comment will be submitted to Ecology within 60 days from receipt of the NOD, in accordance with the NOD response schedule provided by Ecology.

23. **Appendix D-4.** The text in drawing D-88-24-S1 indicates that neoprene sponge rubber will be used as the joint filler material. However, drawing D-88-24-S4 indicates that PRC 280 will be used. Additionally, PRC 280 is the only caulk or filler described in Appendix D-2. Rectify these inconsistencies.

Response: Drawings D-88-24-S1 and -S4 in Appendix D-4, Secondary Containment System and Loading/Unloading Pads Designs, have been revised to correct inconsistencies in describing joint filler material.

24. **Appendix D-4.** The text in drawings D-88-24-S1 and D-88-24-S4 indicates that stainless steel waterstops from Vulcan Metal (or equal) will be used. However, the only information on waterstops in Appendix D-2 is for Greenstreak plastic waterstops, with the coversheet implying that Greenstreak #705 is to be used. Rectify this inconsistency.

Response: Drawings D-88-24-S1 and -S4 in Appendix D-4, Secondary Containment System and Loading/Unloading Pads Designs, have been revised to address the inconsistent information on waterstops.

25. **Section D1.2.1, p. D38.** The retrofitting plans for the existing tanks on ring wall foundations discussed here, and diagramed in Drawing 23008 (Appendix D-8), are inadequate. It must be possible to immediately determine if tank bottoms are leaking. It must also be possible to inspect the secondary containment. These plans do not allow for either of these requirements. Provide an alternative plan. As any acceptable alternative will most likely require removing and reinstalling the tanks, be aware that all tanks so moved will require recertification for structural integrity.

Response: A response to this comment will be submitted to Ecology within 60 days of receipt of the NOD, in accordance with the NOD response schedule provided by Ecology.

26. **Appendix D-8, Drawing 24006.** The plan for new tank foundations on top of old ring wall foundations as diagrammed here is inadequate. Secondary containment must be continuous. Provide an alternative plan which incorporates waterstops between the tank support pad and the containment slab.

Response: A response to this comment will be submitted to Ecology within 60 days of receipt of the NOD, in accordance with the NOD response schedule provided by Ecology.

27. **Section D1.2.1, p. D38.** Text on this page states that secondary containment structure and tank bases for the proposed facility will be constructed over a portion of the existing concrete at the facility. Revise the application to clearly state that any existing concrete, either in the proposed or existing facility, must be decontaminated or removed prior to being poured over. Decontamination, and sampling and analysis to certify decontamination, must be performed as described in the facility closure plan.

If any concrete which may have been exposed to hazardous waste and has subsequently been covered currently exists at the facility and may exist at closure, revise the closure plan to include sampling and analysis of this material prior to certification of secondary containment decontamination.

Response: The text of Section D1.2.1, Design and Construction of Base, has been revised to indicate that existing concrete is decontaminated prior to being covered by new concrete. Decontamination of the surfaces will be verified by sampling and analysis.

Existing concrete in a portion of the existing facility was cleaned as required in drawing 44001 (formerly 24001) note 2.7c prior to placement of a new layer of concrete earlier this year. The note requires scrubbing the existing concrete with muriatic acid until all laitance and surface contaminants are removed, followed by a thorough rinsing using clean water. If necessary, the concrete is recleaned to remove all visual evidence of surface contaminants and laitance. All cleaned concrete was inspected by Cascade Testing Laboratories, an independent concrete inspection agency. The independent

inspector signed a final verification inspection report immediately before new concrete was poured over the cleaned area. The inspection reports are on file at Chempro's corporate office.

It is not expected that the concrete surfaces in the existing facility that presently have new concrete covering them are contaminated. However, the closure plan has been revised to include sampling and analysis of the concrete in the existing facility which has been covered by new concrete to verify it is free of contamination.

28. **Appendix D-5.** The gross volume calculations, on page 1 of 4 from EISI, must be based on the minimum berm height of the entire area, not the average height and not on separate heights for each subarea as is done here. Revise this and subsequent calculations in the appendix to demonstrate adequate secondary containment on this basis.

Response: The gross volume calculations presented in Appendix D-4, Secondary Containment System and Loading/Unloading Pad Design, were developed to take the slope of the containment slab into account. Chempro is not aware of any requirement that minimum berm height must be used. The minimum berm elevation relative to the elevation of the slab for a particular area would be more appropriate to use to determine the volume of the containment area. To use minimum berm height on a level berm would ignore the effect of the sloping slab, and would effectively calculate the containment volume based on the highest point of the slab in relation to the berm. This method would not consider the amount of containment between the low and high points of a sloping slab.

It is anticipated that secondary containment calculations for the existing portion of the facility will be revised to account for additional berms, new concrete, and additional sumps in the existing area. The calculations will be revised as necessary and submitted to Ecology with the response to question #22 within 60 days of receipt of the NOD.

29. **Section D1.4, Figure D1-25.** This diagram indicates that all tanks in the existing tank area can discharge directly to METRO. However text in this section (pp. D56, D57) and section B (pp. B20, B21, B24, B26) as well as Figure B1-3 indicates that treated wastewaters are transferred to holding tanks prior to discharge. Rectify this discrepancy.

Response: A response to this comment will be submitted to Ecology within 60 days of receipt of the NOD, in accordance with the NOD response schedule agreed to by Ecology.

30. **Section D1.4, Figure D1-26.** This diagram indicates that tank 2204, isolation storage, is not "hard plumbed" to any other tank. However, diagram B1-3 implies use of isolation storage during the treatment of phenolic contaminated oil and coolant emulsions. Revise the application to clarify whether tank 2204 is the isolation tank implied in Figure B1-3, and if it is, clarify by what means its contents are subsequently transferred to other tanks.

Response: Tank 2204 is the dangerous waste fuel isolation tank, and it is not hard piped to any other tank. Tank 2204 is not the isolation tank previously implied in Figure B1-3, Oil and Coolant Emulsions: Process Flow Diagram. Phenolic-contaminated oil and coolant emulsions will be isolated in one of the oil/coolant storage tanks, such as tanks 2101 - 2104, 2703, 2706, or 2708 - 2710. Figure B1-3 has been revised to clarify this.

31. **Section D1.4, Figures D1-25 and D1-26.** These diagrams show the outputs of the sludge storage and processing tanks and centrifuge go to oil/coolant storage tanks only, with no apparent connection to wastewater treatment. However, Figure B1-5 and text on page B27 indicate the primary output of sludge supernatant and centrate is to the wastewater holding tanks. Rectify this inconsistency.

Response: A response to this comment will be submitted to Ecology within 60 days of receipt of the NOD, in accordance with the NOD response schedule agreed to by Ecology.

32. **Section F3.1.3, p. F27.** This section implies that the foamite fire suppressant system is hard plumbed only to tanks in the non-hazardous portion of the facility. During tours of the facility, Ecology staff were informed that all hazardous waste tanks are hard plumbed. Revise the application to state explicitly which tanks have the foamite system directly installed. If tanks which may contain flammable hazardous waste do not have foamite, provide rationale for this.

Response: The text of Section F3.1.3, Emergency Equipment, has been revised to read: "A manually-activated foamite fire suppressant system is installed in the existing RCRA facility and in oil tanks in the non-hazardous portion of the facility. Automatic fire control equipment complying with the local fire code will be installed where required."

The City of Seattle Fire Department requires that automatic fire control equipment be provided for tanks storing Class I and II liquids. The Pier 91 Facility also has Protection for Exposures (defined in the Uniform Fire Code as protection by a public fire department or private fire brigade capable of providing cooling water streams on structures on property adjacent to liquid storage). The UFC does not require additional fire protection for tanks storing flammable liquids.

Foamite is effective against fires in petroleum fuel tanks. It is not effective with water-soluble materials or materials with high water content such as those that will be handled in the planned tanks. As stated in Section F1.1 (Barrier and Means to Control Entry), Section F (Procedures to Prevent Hazards) applies to the proposed active dangerous waste portion of the Pier 91 Facility. However, details on the foamite system are included for informational purposes.

33. **Section F5.0, p. F43.** This section states that the facility "does not accept flammable wastes (flash point < 100F)". This conflicts with text on pages B20, B25, and C15, which state that the facility will accept such wastes into isolation storage. Rectify this inconsistency.

Response: The text of Section F5.0, Prevention of Reaction of Ignitable, Reactive, or Incompatible Wastes, has been revised to indicate that wastes with a flash point < 100øF are not processed, but are placed in isolation storage.

34. **Section I1.5.3, p. I33.** There is a typographic error in the second paragraph. It should read "...consultants at the time...".

Response: The typographic error in Section I1.5.3, Sampling and Analysis, has been corrected as requested.

35. **Section I1.5.3.** Revise the application to include biased concrete sampling under locations of stains or include rationale for not doing such sampling.

Response: Applicable portions of Section I, Closure Plan and Closure Cost Estimates, have been revised to include biased concrete sampling under locations of stains and cracks. Section I has also been revised to eliminate soil sampling under locations of stains, since constituents staining the concrete would not migrate through the impermeable coating (which is inspected daily and repaired as necessary) on the concrete surface.

36. **Section I1.5.3, p. I41.** Revise the application here and wherever else applicable to clearly state that all closure samples will be analyzed for 40 CFR Part 261 Appendix VIII constituents, not just wastes historically managed on site. Revise closure cost estimates to reflect this change as well. (See also comment number 50)

Response: Analysis of soil samples for wastes historically managed on-site was discussed extensively with Ecology's Hazardous Waste Permits staff in 1989, and confirmed at that time as a realistic plan consistent with state and federal regulations.

Analysis of concrete and soil samples for indicator compounds as well as for wastes known to have been handled at the facility are shown in the sampling and analysis plan for final closure (see Section I1.5.3, Sampling and Analysis). These compounds can be indicative of the presence of other potential contaminants at the site. By analyzing for these constituents, it can be determined whether further sampling and clean up is necessary. However, because the nature of the wastes handled at the Pier 91 Facility is known now and will be known at the time of final closure, there is no reason to assume that other contaminants may be present but not found during final closure sampling and analysis.

Chempro has been told that Ecology's Hazardous Waste Permit group (with all new staff since 1989) is now re-evaluating closure guidance developed in 1989, but that a date for issuance of the revised guidance is at least six to nine months away. Chempro plans to leave the discussion of closure soil analysis unchanged until the revised closure guidance is issued to avoid creating needless rounds of additional revisions even before the final nature and extent of Ecology's revised closure guidance has been determined.

As discussed in a meeting between Chempro and Ecology July 2, 1991, Chempro will submit a draft demonstration to Ecology illustrating the rationale for not analyzing all closure samples for Appendix VIII constituents. Chempro plans to submit a draft of this demonstration to Ecology by July 26, 1991. We plan to submit a final version to Ecology by August 9, 1991, after Ecology has reviewed the draft demonstration.

We are willing to continue to meet with Ecology at any time to discuss the continued use and/or revisions of this approach in revised closure guidance being developed by Ecology.

37. **Table I1.3,.** Clarify the source of the rinsate requiring off-site disposal as a DW fuel. The current construction of the table implies that all of this material is derived from the rinsing of tank 2204. State that this material must be sent to a certified burner or meet minimum Btu requirements as described in Sections B1.6.2 and C2.0. Also clarify the source and nature of "rinsate requiring off-site treatment and disposal". Is this rinsewater sludge? (See also comment number 44)

Response: The rinsate requiring off-site disposal as dangerous waste fuel is derived only from the rinsing of Tank 2204. Since this tank is an isolation tank for the storage of materials which are blended for use as dangerous waste-derived fuels, the material generated during cleaning of the tank will be handled accordingly. It is intended that the rinsate will be sent off-site for treatment and phase separation. After phase separation, the liquid portion exhibiting > 5000 Btu/lb (approximately 10%) will be sent to an authorized burner of dangerous waste fuels. The water portion will undergo wastewater treatment (80%), and the sludges (10%) will be packaged for incineration or energy recovery, depending on the Btu values. Table I1-3, Decontamination Rinsate Management, has been revised to indicate that the rinsate from Tank 2204 will be sent off-site for phase separation and treatment, including wastewater treatment plus energy recovery and/or incineration, at a RCRA-permitted facility.

The destinations of decontamination rinsate were developed and are included in the closure plan only for the purpose of deriving costs for disposal. At the time of final closure, other outlets such as recycling may exist and may be more cost effective than treatment.

The "rinsate requiring off-site treatment and disposal" is rinsate from Tank 2707, which will be the last tank to be decontaminated. Since this will be the last tank in service at closure, there will be no means of treating the rinsate generated from its decontamination on-site. This is already stated in Section I1.5.2, Decontamination Procedures, and on Table I1-3, Decontamination Rinsate Management. The description of the destination of this rinsate in Tables I1-3 and I3-3, Facility Decontamination Costs, has been revised to "rinsate requiring off-site treatment and discharge," to avoid confusion between this material and the rinsate generated from decontamination of Tank 2204.

38. **Section I1.5.3, p. I36.** If the facility has handled listed waste, then the containment pad must be presumed to be a listed waste and cannot be disposed of at a sanitary landfill. Delete the reference to this option.

Response: The text of Section I1.5.3, Sampling and Analysis, has been revised to delete the option of disposing of uncontaminated concrete at a sanitary landfill if 1) the landfill operator and the County Health Department give written approval, and 2) the landfill complies with the minimum functional standards of WAC 173-304, including liner and leachate collection systems. .

39. **Table I1-5.** In the column under "Quantity", revise the table to indicate 30 random samples analyzed for volatiles under the existing dangerous waste tank system, not 10 as it currently states.

Response: Table I1-5, Summary: Proposed Soil Sampling and Analysis Plan, has been revised to show the correct number of samples to be analyzed.

40. **Table I3-1.** Please clarify what is meant by "1990 annual inflation factor". Does the application of this multiplier to the original cost estimates (in 1988 dollars) result in 1989 dollars or 1990 dollars? If 1990 dollars, please account for the 1989 inflation factor.

Response: The 1990 annual inflation factor adjustment (1.07) in the revised Table I3-1, Cost Estimates Reflecting Closure at Maximum Waste Inventory, was calculated from the 1989 and 1990 inflation factors to adjust the 1988 costs in the cost estimate to 1990 dollar equivalents. The 1990 annual inflation factor adjustment replaces the need to include an adjustment of the 1988 costs to 1989 dollars and an additional adjustment to 1990 dollars.

The 1989 inflation factor that was included on the previous version of Table I3-1 adjusted the 1988 costs in the cost estimate to 1989 dollars. The annual inflation factor for 1990 (1.04) adjusts 1989 costs to 1990 dollar equivalents. The 1990 inflation factor was not available until April 1991.

To avoid confusion, Table I3-1 has been revised to show the annual inflation factors for both 1989 and 1990.

41. **Table I3-4.** In the column under "Quantity", revise the table to indicate 10 analyses total for composited random samples in the existing dangerous waste tank system, not 5 as it currently states.

Response: Table I3-4, Sampling and Analytical Costs, has been revised to show the correct number of samples to be analyzed. Please note that the costs for analysis were correct as shown.

42. **Appendix I-2, section A2.** The unit costs for the material returned to DW fuels (at the end of the section) do not add to the total shown. The costs add to $.45/gal, while the total is indicated as $1.29/gal. Please clarify what is the correct unit cost and revise the cost estimate as necessary.

Response: Section A2 of Appendix I-2, Closure Costs for Maximum Waste Inventory, has been revised to indicate the cost for 777 gallons of material

returned to dangerous waste fuels is $0.45/gallon. Cost estimates have also been revised accordingly.

43. **Appendix I-2, section A4.** For the last cost estimate of this section (supernatant returned to industrial wastewater), no treatment cost is presented for the wastewater. Justify this omission as well as the quantity of sludge produced and sludge treatment unit cost.

Response: The quantity of supernatant returned to wastewater treatment that is referred to at the end of Section A4 (8,755 gallons) is already included in the cost calculations: 6,367 gallons of supernatant is the "40% (of the original waste volume) return to wastewater treatment;" 2,388 gallons is "50% (of the half of the remaining 60% of the original volume) return to wastewater treatment." 6,367 + 2,388 = 8,755. The text which refers to the "8,755 gallons (6,367 and 2,388 gals.) of supernatant" is included to clarify the origin of the 438 gallons of sludge produced.

Operational experience indicates that this supernatant produces sludge at a rate of approximately 5% (8,755 x 5% = 438). The unit cost for treatment of the sludge is based on the costs for industrial waste sludge treatment presented in Section A4. The cost for treatment of the sludge produced from the supernatant has been revised to indicate that the average treatment cost is $1.56/gallon.

44. **Appendix I-2, section A5.** Revise the application to discuss this disposal option in Section I1.5.1. State that this material, and all other inventory or rinsate to be incorporated in DW fuel must be sent to a certified burner or meet minimum Btu requirements as described in Sections B1.6.2 and C2.0.

Response: As stated in the response to item #37, Table I1-3, Decontamination Rinsate Management, has been revised to state that the rinsate will be sent off-site for phase separation and treatment, including wastewater treatment plus energy recovery and/or incineration.

45. **Appendix I-2, section C6.** As with inventory elimination, closure cost estimates for rinsate treatment and disposal must not assume the availability of on-site treatment. Revise the cost estimate to include transportation to an alternate facility or portable treatment brought on-site.

Response: Although state and federal regulations and guidance clearly indicate that on-site treatment capacity may be considered to estimate costs for final closure, Section I1.5.2, Decontamination Procedures, Table I31, Cost Estimates Reflecting Closure at Maximum Waste Inventory, and Appendix I-2, Closure Costs Calculations for Maximum Waste Inventory, have been revised to include additional contingency closure cost estimates for off-site treatment of decontamination rinsate.

46. **Appendix I-2, Section C6.** This section is confusing as constructed. Clarify the quantity of rinsate destined for dangerous waste fuel. As currently worded it is implied 223,868 gallons is the quantity of dangerous waste fuel.

Response: Section C6 of Appendix I-2, Closure Costs for Maximum Waste Inventory, has been revised to clarify the sources, fates, and quantity of decontamination rinsate, including rinsate destined for daangerous waste fuel.

47. **Appendix I-2, section C6.** Clarify, here and wherever else the term is used, what is meant by "incineration as dangerous waste fuel". Is this incineration? Or is this incorporation in DW fuel as the current cost basis would imply? (See also comment number 44)

Response: Sections I3.3, Inventory Elimination Costs, and C6 of Appendix I-2, Closure Costs for Maximum Waste Inventory, have been revised to indicate that the rinsate is blended as dangerous waste fuel and transported off-site to a RCRA-permitted dangerous waste fuels burner. The unit costs associated with this activity are correct as shown.

48. **Appendix I-2, section C6.** Explain the derivation of all the volume quantities in the section describing the fate of the 210,576 gallons of rinsate.

Response: Section C6 of Appendix I-2, Closure Costs for Maximum Waste Inventory, has been revised to clarify the sources and fate of decontamination rinsate.

49. **Appendix I-2, section D1.** There is a typographic error, the first sentence should read, "Assume 19 concrete samples...". Note, the cost calculations are correct.

Response: Section D1, Collection Costs for Concrete Samples, of Appendix I-2 has been revised to indicate the correct number of samples.

50. **Appendix I-2, section D2.** Revise the cost estimates in this section to include analysis for all 40 CFR Part 264 Appendix VIII constituents.

Response: See response to question #36.

51. **Appendix I-2, section D-4.** Revise this section to include costs for 45 random soil samples under dangerous waste tank system analyzed for volatiles, not 15 as currently indicated. Additionally, please note that the current subtotal of TOTAL ANALYTICAL COSTS FOR SOILS SAMPLES does not appear to be correct. As currently presented costs should total $33,450, not $37,286. Adding the additional cost of the 30 extra volatiles analyses discussed above (30 x $225 = $6,750) should result in a revised total of $40,290.

Response: Section D4, Analytical Costs for Soil Samples, of Appendix I-2 has been revised to show the correct number of samples to be analyzed. Costs presented in Appendix I-2 and in Table I3-4, Sampling and Analytical Costs, have been corrected.

52. **Appendix I-2, section D-4.** The current TOTAL SAMPLING & ANALYTICAL COSTS does not include the cost of collecting soil samples ($1,296). Revise this total to include this cost as well as the revised analytical cost subtotal. (See comment number 51)

Response: Section D4, Analytical Costs for Soil Samples, of Appendix I-2 has been revised to correct these inconsistencies.

53. **Appendix I-2, section E2.** Clarify the number of hours the professional engineer will spend on site each week during closure. The text in this section says 4 hours, with the cost based on 6 (clarify whether this includes travel time). However, figure I1-3, states that the professional engineer will spend 6-8 hours per week on site. Revise the cost estimate to be consistent with the 6-8 hours on site per week figure.

Response: The text of Section E2, Engineering Certification, in Appendix I-2 has been revised to be consistent with the cost calculation, which indicates that the engineer will be on site at least 6 hours per week.

54. **Appendix I-4.** Clarify whether the $10,000,000 coverage is per facility or for all five Chempro facilities. If it is for all five, demonstrate that occurrences at one or more facilities cannot reduce the coverage remaining under the annual aggregate such that another facility cannot meet the minimum regulatory requirements.

Response: The $10,000,000 liability insurance policy covers all 5 Chempro TSD facilities, as indicated by the listing of facility names, addresses and EPA/State identification numbers on the insurance certificate itself. To further clarify that the policy provides coverage for each facility at least equal to the minimum regulatory requirements, a statement to that effect will be added to the policy at the time of the next renewal (December 1991).

55. **Section J2.6, p. J7.** Revise this section to clearly state that MTCA applies to all facility cleanup activities, not just closure.

Response: Section J2.6, Model Toxics Control Act, has been revised to indicate the applicability of MTCA to cleanup activities as well as final closure.